

What is claimed is:

1. A method for the measurement of a cellular process in one or more different populations of cells, the method comprising:
 - i) providing one or more different populations of cells adhering to support particles said support particles including a scintillant substance and being adapted for cell growth;
 - ii) introducing samples of each of said populations of cells, adhering to said support particles, contained in a fluid medium into separate reaction vessels for each population sampled;
 - iii) introducing into each reaction vessel a reagent labelled with a radioisotope under conditions so as to cause a portion of said radiolabelled reagent to become associated with said cells; and
 - iv) detecting light emission from the scintillant particles caused by radioactive decay of the radioisotope as a means of measuring said cellular process.
2. A method for the measurement of the effect of a test compound on a cellular process in one or more different populations of cells, the method comprising:
 - i) providing one or more different populations of cells adhering to support particles said support particles including a scintillant substance and being adapted for cell growth;
 - ii) introducing samples of each of said populations of cells, adhering to said support particles, contained in a fluid medium into separate reaction vessels for each population sampled;
 - iii) introducing into each reaction vessel a sample of a test compound whose effect on said cellular process is to be measured;
 - iv) introducing into each reaction vessel a reagent labelled with a radioisotope under conditions so as to cause a portion of said radiolabelled reagent to become associated with said cells; and

- v) detecting light emission from the scintillant particles caused by radioactive decay of the radioisotope as a means of measuring the effect of the test compound on said cellular process.

- 5 3. The method of claim 2 wherein the measurement of step v) is compared with a measurement of a cellular process in one or more different populations of cells in the absence of the test compound.
- 10 4. The method of claim 2 wherein each of the cell samples is treated with different concentrations of said test compound in the presence of a fixed quantity of said radiolabelled reagent.
- 15 5. The method of claim 1 wherein different concentrations of said radiolabelled reagent are incubated with different samples of each of said cells in a fluid medium in separate reaction vessels.
- 20 6. The method of claim 1 wherein said vessel is a well of a multiwell plate.
- 25 7. The method of claim 1 wherein said detection step is performed in the presence of radiolabelled reagent both associated with said cells and in the fluid medium.
- 30 8. The method of claim 1 wherein said detection step is performed by scintillation counting.
9. The method of claim 1 wherein said detection step is performed by imaging.
10. The method of claim 1 wherein said cellular process is selected from biosynthesis, uptake, transport, receptor binding, metabolism, fusion, biochemical response, growth and death.

11. The method of claim 10 wherein said receptor binding comprises a specific binding interaction between the radiolabelled reagent and a specific binding partner located in or on the surface of the cells.
- 5 12. The method of claim 1 wherein the radioisotope is selected from ^{14}C , ^3H , ^{35}S , ^{33}P , ^{125}I , ^{32}P , ^{45}Ca , ^{55}Fe , ^{51}Cr , ^{86}Rb and ^{109}Cd .
13. The method of claim 1 wherein said cellular process is performed in real time using a non-invasive technique.
- 10 14. A solid support for cell based assays said support comprising particles including a matrix, and having a scintillant substance which has been coated onto, or integrated into, the matrix of the particles, and being adapted for cell growth.
- 15 15. The solid support of claim 14 wherein said particles comprise polymeric beads.
16. The solid support of claim 15 wherein said beads have a porous or macro-porous structure.
- 20 17. The solid support of claim 14 wherein said particles comprise a cross-linked dextran.
- 25 18. The solid support of claim 14 wherein said particles are in the form of a bead having a diameter in the range from $1\mu\text{m}$ to $500\mu\text{m}$, and more preferably in the range from $50\mu\text{m}$ to $250\mu\text{m}$.
- 30 19. The solid support of claim 14 wherein said scintillant substance is an inorganic scintillant preferably yttrium silicate (YSi) or yttrium oxide (YOx).